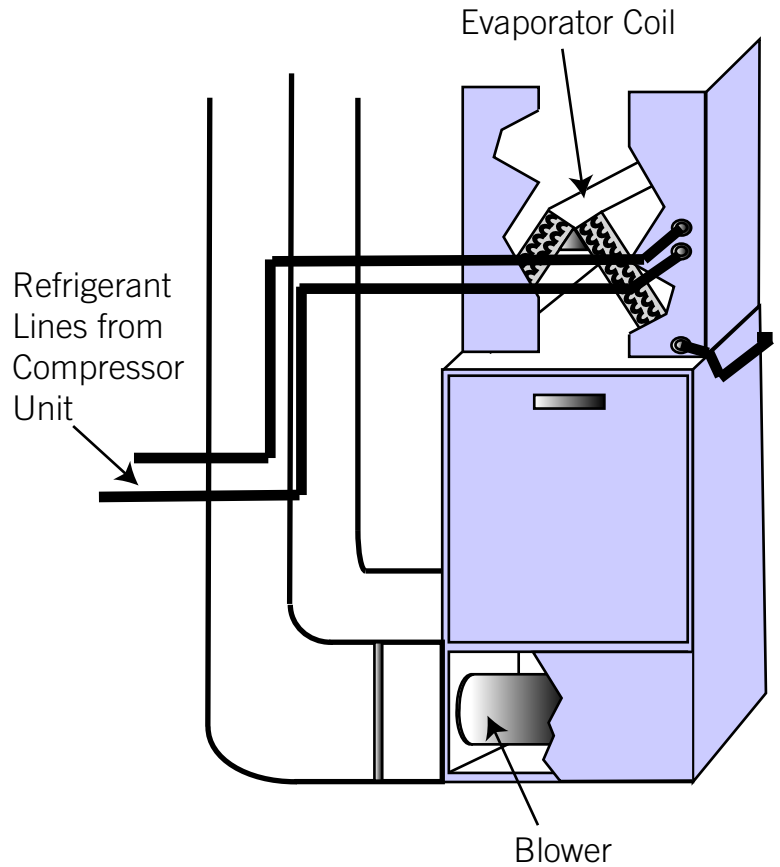


Central Air Conditioning

Central air conditioning systems are a luxury in some areas of North America and a basic necessity in others. Whatever your need may be, it is in your best interest to understand how to choose the right system for your home, and how to maintain it for optional use.

Central air conditioning systems have become more sophisticated and more efficient in the last few years. The most common system is called a “split system” because part of it (the condenser) is located outside the house, and part (the evaporator) is located inside. The evaporator is mounted inside an air handler, a blower that circulates air throughout the house. For homes with forced-air heating, the furnace acts as the air handler. In these cases, the evaporator is simply mounted on top of the furnace.



SEER

SEER stands for Seasonal Energy Efficiency Ratio and designates the efficiency rating of air conditioning systems. A 14 SEER air conditioner is more efficient than a 10 SEER unit. As of January 2006, manufacturers are no longer permitted to manufacture air conditioning systems with a SEER less than 13. Prior to this date, the minimum SEER was 10.

The new 13 SEER regulation does, however, create challenges for some home owners. The system itself is physically much larger than older systems. Since the condenser sits outside, increased size does not matter here, but the evaporator is also much larger on the new systems. If you are replacing a failed older system, the new evaporator may not fit into the old air handler, or even into the space it once occupied. The ducting can be modified to fit the new evaporator, but in some cases the entire air handler (or furnace) may have to be replaced. Other work-arounds also exist, but they are beyond the scope this discussion.

What Are the Capacity Issues?

Proper sizing or capacity of a system is important. Installers traditionally err on the side of over sizing a system to avoid client complaints on the hottest day of the summer, such as the system not keeping up with the heat, or the system running continuously.

A larger-than-necessary air conditioning system will not function optimally. It will cool the house off quickly and then shut off. These short on-cycles are not good for two reasons:

- Most air conditioning systems take about seven minutes of operation to reach peak efficiency. An oversized system will operate at a fraction of its rated efficiency, costing more to operate than it should.
- The central air conditioning system also dehumidifies the home. If the on-cycles are short, you get little dehumidification. The result is a cold and clammy home.

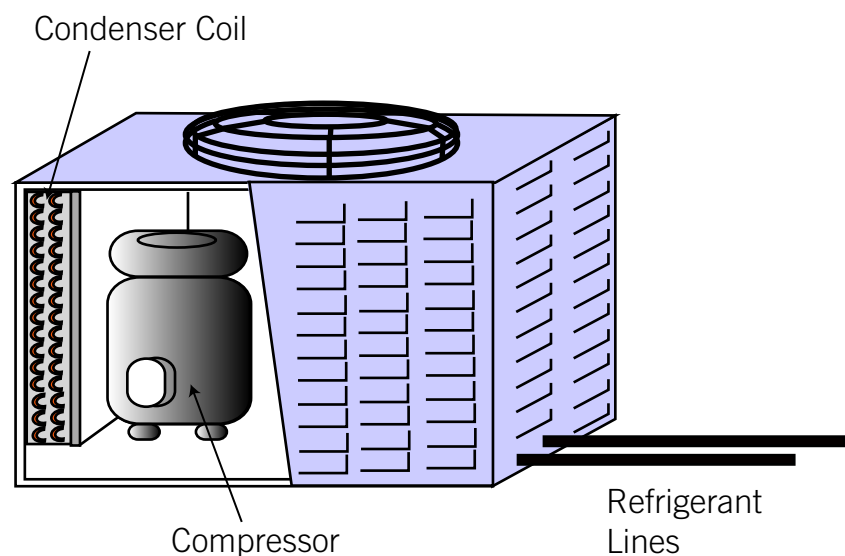
Choosing the appropriate capacity for the air conditioning system requires a skilled and experienced air conditioning contractor that can do a heat gain calculation for your home. Some of the newest and most expensive systems available are capable of operating at two different capacities. The system operates on low most of the time, with long on-cycles that generate lots of dehumidification. If the system cannot keep up with a heat gain, it switches into a higher gear.

Maintenance

A well-maintained air conditioning system will last longer and cool better than a neglected system.

- Clean or replace the filter in the air handler regularly, not just for clean air, but also because the filter protects your heating and cooling equipment. Dust can clog the evaporator coil, reducing the heat transfer, efficiency, and life of the system.
- Trim vegetation away from the condenser for free air flow. Do not enclose the condenser with trellis or anything else that might block air flow.
- Have the system serviced regularly. Servicing is inexpensive and will increase the life and efficiency of the system. A technician typically cleans the condenser coils and checks the refrigerant pressures, adjusting the refrigerant charge if needed.

Like any system in your home, a central air conditioner will work at its peak efficiency and performance when it is properly fitted for capacity and regularly maintained.



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